

CLAIMS

1. A water-solubilizing agent for nanocarbons comprising, as an active ingredient, a surface active agent capable of forming globular micelles having a diameter of from 50 to 2000
5 nm in an aqueous solution or a water-soluble macromolecule having a weight average molecular weight of from 10,000 to 50,000,000.

2. The water-solubilizing agent according to Claim 1, wherein the surface active agent is a phospholipid- or non-
10 phospholipid-based surface active agent.

3. The water-solubilizing agent according to Claim 2, wherein the surface active agent is one or more selected from the group consisting of distearoylphosphatidylcholine (DSPC), dimyristoylphosphatidylcholine (DMPC),
15 dipalmitoylphosphatidylcholine (DPPC), 3-[(3-cholamidopropyl)dimethylamino]-2-hydroxy-1-propanesulfonate (CHAPSO), 3-[(3-cholamidopropyl)dimethylamino]-propanesulfonate (CHAP) and N,N-bis(3-D-gluconamidopropyl)-cholamide.

20 4. The water-solubilizing agent according to Claim 1, wherein the water-soluble macromolecule is a vegetable-based surface active agent.

5. The water-solubilizing agent according to Claim 1, wherein the water-soluble macromolecule is a compound selected
25 from water-soluble polysaccharides, such as alginates, for example, alginic acid, propylene glycol alginate, gum arabic, xanthan gum, hyaluronic acid, chondroitin sulfate, water-

soluble celluloses, such as cellulose acetate, methyl cellulose, hydroxypropyl methyl cellulose, chitosan, chitin; water-soluble proteins, such as gelatin, collagen; polyoxyethylene-polyoxypropylene block copolymer; and DNA.

5 6. The water-solubilizing agent according to any one of Claims 1 to 5, which is in the form of an aqueous solution.

7. The water-solubilizing agent according to Claim 6, wherein the agent further comprises a nanocarbon-permeating substance and an oxidizing agent and the pH ranges from 6 to
10 14.

8. The water-solubilizing agent according to Claim 7, wherein the nanocarbon-permeating substance is lithium ion.

9. The water-solubilizing agent according to Claim 7 or 8, wherein the oxidizing agent is a persulfate.

15 10. The water-solubilizing agent according to any one of Claims 1 to 9, wherein the nanocarbons are carbon nanotubes (single- and multi-layered types and cup-stack types), carbon nanofibers or carbon nanohorns.

11. The water-solubilizing agent according to any one of
20 Claims 1 to 10, which is used for refining nanocarbons.

12. A process for refining nanocarbons comprising the step of adding a crude product containing nanocarbons to the water-solubilizing agent as defined in any one of Claims 6 to 11 in the form of an aqueous solution, thereby dissolving the
25 nanocarbons into the water-solubilizing agent.

13. The process for refining nanocarbons according to Claim 12, which further comprises the step of treating the

crude product containing nanocarbons with an acid before adding the crude product to the water-solubilizing agent when a metal catalyst was used in a process for producing the crude product.

5 14. A process for producing high-purity nanocarbons comprising the step of adding a crude product containing nanocarbons to the water-solubilizing agent as defined in any one of Claims 6 to 11 in the form of an aqueous solution, thereby dissolving the nanocarbons into the water-solubilizing
10 agent.

 15. The process for producing high-purity nanocarbons according to Claim 14, which further comprises the step of treating the crude product containing nanocarbons with an acid before adding the crude product to the water-solubilizing
15 agent when a metal catalyst was used in a process for producing the crude product.